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now so much as a liberal attitude on the part of the colleges and universities in accepting the unified course for admission. There is no line along which the child-study investigators could better direct their attention than to placing mathematics on a sounder pedagogical basis; for there is no subject which causes such waste of time and such humiliation through failure on the part of the child.

NOTES AND NEWS.

EDITED BY W. DEW. CAIRNS.

An article (in German) by Professor T. H. Gronwall of Princeton University on the summability of Laplace and Legendre series appears in the June number of *Mathematische Annalen*.

Professor C. J. Keyser discourses upon "The Study of Mathematics" in his inimitable style in the *Columbia University Quarterly* for June.

Mr. W. W. Kustermann has been appointed to an instructorship in mathematics in the University of Michigan, to succeed Mr. E. B. Escott who resigned recently.

Professor R. C. Archibald has been added to the editorial board of the *Bulletin* of the American Mathematical Society.

At Purdue University Mr. Ralph B. Stone has been promoted to an assistant professorship of mathematics; Dr. Thomas E. Mason, Mr. O. W. Albert and Mr. Charles K. Robbins have been appointed to instructorships; Professor William Marshall has been given leave of absence for a year of study in France.

The June issue of *School Science and Mathematics* contains a paper by Professor W. B. Ford of the University of Michigan on "The Future of Geometry" read before the spring meeting of the Michigan Schoolmaster's Club; and a paper by Miss I. E. Holroyd entitled "Mathematics in the Education of Girls" read before the Mathematical Club of the Kansas State Agricultural College.

Mr. W. A. Reinert, of the Oak Park, Ill., high school, has been appointed to an instructorship in mathematics at the Michigan Agricultural College, Lansing, Mich. He is a bachelor of the University of Wisconsin and has been taking graduate work at the University of Chicago.

Professor David Eugene Smith of Teachers College, Columbia University, has leave of absence for the next academic year. He attended the Napier tercentenary at Edinburgh where he made an address, and also the Roger Bacon celebration in Oxford, where he read a paper on "Roger Bacon as a mathematician."

The Mathematics Teacher for June prints an interesting address by Dean F. C. Ferry of Williams College on "Mathematics: The Subject and the Teacher."

Mr. M. G. Gaba, who has just taken the doctor's degree at the University of Chicago, has been appointed to an instructorship in mathematics in the Carnegie Institute of Technology at Pittsburg, Pa.

Professor F. B. Wiley, who has been on leave of absence from Denison University, Granville, Ohio, for the purpose of graduate study, took the doctor's degree in mathematics at the University of Chicago at the convocation held in August.

Science, May 8, 1914, contains a short note on the first meeting and the organization of the "Committee of One Hundred on Scientific Research," which was recently appointed by the American Association for the Advancement of Science. Ten members of this committee are connected with bureaus of the federal government. The educational institutions which are represented on this committee by at least three men each are as follows: Harvard (12), Chicago (9), Columbia (7), Yale (5), Johns Hopkins (5), Carnegie Institution (5), Massachusetts Institute of Technology (4), Cornell (3), Illinois (3), and Stanford (3). Charles W. Eliot, president emeritus of Harvard University, is chairman of the committee, which will hold its next meeting at Philadelphia on December 28, 1914. The committee aims to consider broad questions relating to research "under the government, in the universities and in other institutions."

A Heft of the *Encyklopädie der Mathematischen Wissenschaften*, devoted to elementary geometry, appeared in June of the present year. It discusses many questions which are of interest to the teachers of elementary geometry in the high schools. The parts of this encyclopedia which have been published contain about ten thousand pages. Several additional parts are in press.

The May, 1914, number of the *Revista de la Sociedad Matemática Española* contains a brief account of the first congress of mathematical philosophy which was held at Paris during last April.

An interesting article on the teaching of mathematics in Japan appeared in the May number of the *Zeitschrift für mathematischen und naturwissenschaftlichen Unterricht*.

The mathematics section of the California High School Teachers Association met at the University of California July 2 and 3, 1914. Among the papers presented were the following: "How shall the isolated teacher of mathematics keep up his interest?" by Professor D. N. Lehner, University of California; "Mathematics and life in the intermediate school," by Miss Thirmuthis Brookman, special instructor in the University of California summer session; "The

university and the secondary schools," by Dr. Henry W. Stager, of Fresno Junior College, and chairman of the section. A fuller report of this meeting will appear in a later issue of the MONTHLY.

At the University of Minnesota W. H. Bussey has been promoted to an associate professorship in mathematics, and H. L. Slobin and W. F. Holman have been promoted to assistant professorships.

The Macmillan Company of London has recently published "A first book of geometry" by J. V. H. Coates as one of the series entitled "First Books of Science." It contains only 142 pages, and sells for 50 cents.

Isis, the new journal devoted to the general history of science, will in the future publish an *edition de luxe* on thin paper for the convenience of bibliographers and librarians.

In connection with the commemoration exercises of the seventh centenary of Roger Bacon's birth a volume of essays on various aspects of his activity has been published by the Oxford University Press. Professor David Eugene Smith is one of the contributors. His paper is entitled "The place of Roger Bacon in the history of mathematics." Bacon's works on optics, mirrors, physics, alchemy and chemistry, and medicine are also treated in special essays. The volume is edited by A. G. Little; the other contributors are L. Baur, F. Picavet, Cardinal Gasquet, S. A. Hirsch, Eilhard Wiedemann, S. Vogl, J. Wurmschmidt, Pierre Duhem, M. M. P. Muir, H. W. L. Hime, E. Withington, and J. E. Sandys.

Columbia University will commemorate Bacon's birth by appropriate exercises at the opening of the college year this fall. A pageant is planned as part of the program. The Research Club of the University of Michigan devoted the April meeting to addresses in honor of Bacon. Professors Dow, Tatlock, Lloyd, and Guthe contributed the papers. Professor Guthe's paper on "Roger Bacon as a scientist" appeared in the August issue of *The Open Court Magazine*.

Volney H. Wells, A.B. Olivet College, graduate student 1912-1914 at the University of Michigan, has been appointed instructor in mathematics at the University of Michigan.

Professor Elijah Swift, of Princeton University, has been appointed head of the department of mathematics at the University of Vermont.

Miss Susan Rose Benedict, fellow in mathematics at the University of Michigan in 1913-1914, has been promoted to an associate professorship of mathematics at Smith College. Miss Benedict received the Ph.D. in June at the University of Michigan. Her thesis is entitled, "A comparative study of the early treatises which introduced into Europe the Hindu art of reckoning."

Paul E. Hemke and L. E. Williams have been appointed to instructorships in mathematics at the Georgia School of Technology, Atlanta, Ga. They were both graduate students at the University of Chicago.

Professor E. R. Hedrick read a paper at the June meeting of the Society for the Promotion of Engineering Education held at Princeton University, on the subject "The Calculus without Symbols." This paper is published in full by the Society in its volume of proceedings. Special interest attaches to such a discussion in view of the current tendency to introduce the elements of the calculus into secondary instruction.

The first part of the *Encyclopédie des Sciences Mathématiques* appeared in 1904. It was then expected that the entire work could be issued in about 50 parts, each containing about 150 pages. Although more than 30 parts have now been published, it appears likely that more than 50 additional parts will be needed to complete the work. Hence we seem to be farther from the end than they thought they were at the beginning of the publication. More than 20 parts are now in press. It should, however, not be assumed that all of these will appear soon, as some parts have been in press for several years.

Those particularly concerned with the teaching of secondary algebra will be interested in the experiment by Professor E. L. Thorndike of Teachers College, Columbia University, reported in *The Mathematics Teacher* for March. A list of problems in algebra was graded as to difficulty by two hundred teachers of mathematics. There is a satisfactory agreement in the results, notwithstanding some striking differences in estimating the relative difficulty of certain problems. Each of the following was rated all the way from the easiest to the hardest in point of difficulty: (1) "If $a = 6$ and $b = 3$, what does $\sqrt{a}\sqrt{b}$ equal?" (2) "Find the average midnight temperature for the week in which the daily midnight temperatures were 15, 3, 0, -7 , -9 , 6, and 17 degrees." (3) "At what time between 6 and 6:30 o'clock are the hands of a watch at right angles to each other?"

The Cambridge University Press publishes "A Shorter Geometry" by Godfrey and Siddons which is written in the spirit of the recommendations of the British Board of Education concerning the teaching of geometry. The course is organized in three stages: (1) Introductory work concerned with the fundamental notions and not primarily designed to give facility in using instruments; (2) Discovery by experiment and intuition of the fundamental facts about angles at a point, parallels, angles of a triangle and polygon, congruent triangles; the accurate use of instruments and the elementary ideas of logical argument; (3) Deductive development of the propositions which can be derived from those propositions discovered by experiment and intuition in the second stage. The proofs of the propositions which were enunciated in the second stage are grouped in an appendix which may be postponed at pleasure or "till they are needed for

examination purposes". It is the expressed belief of the Board that the deductive proofs of the propositions thus postponed are more difficult and less persuasive than those that follow, that difficulties of sequence center here very largely, and that more rapid treatment of these is conducive to better results in subsequent work.

In extension of the summary of recent work on the southerly deviation of a falling body given in the MONTHLY of December, 1913, it may be said that a paper entitled "Deviation of Falling Bodies" by Professor F. R. Moulton of the University of Chicago appears in the June number of the *Annals of Mathematics*. Professor Moulton concludes that when the approximations introduced in the process are properly analyzed, the deviation of a body freely falling a small distance near the earth's surface is found to be equator-ward for all latitudes between 0° and $\pm 90^\circ$.

The International Commission on the Teaching of Mathematics met at Paris April 1 to 4 inclusive with an enrolment of 160, half of whom were from France. It was unfortunate that the time of the meeting made impossible a representative attendance from England or America, only six from the former and one from the latter being present. The chief interest centered about the sectional meetings where the subjects of discussion were the reports on (a) the results of the introduction of the elementary notions of the calculus into secondary instruction, and (b) the mathematical instruction of engineering students. *L'Enseignement* for May 15 gives a very full account of this meeting, including brief summaries of what are said to be admirable reports on the two topics mentioned above. Later notice will be given in these columns of the publication of the complete reports.

The Commission will hold its sessions next year in Munich, at which time it is expected that the reports of the subcommissions of all countries will be complete. It will be remembered that the American reports were all completed for presentation at the time of the meeting of the Commission in Cambridge in 1912, and that, as is probably known to all teachers of mathematics, these may be obtained free on application to the U. S. Bureau of Education, Washington, D. C.